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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/615,052	07/07/2003	Toshikazu Hori	SS-722-14	8055

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EXAMINER

SELBY, GEVELL V

ART UNIT	PAPER NUMBER
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2622

DATE MAILED: 09/19/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/615,052

Applicant(s)

HORI ET AL.

Examiner

Gevell Selby

Art Unit

2622

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-7 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-7 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 07 July 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_.

## DETAILED ACTION

### *Claim Rejections - 35 USC § 102*

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. **Claims 1, 2, and 4-6 are rejected under 35 U.S.C. 102(e) as being anticipated by Shiomi et al., US 6,791,615.**

In regard to claim 1, Shiomi et al., US 6,791,615, discloses a multi-tap camera, comprising:

a multitap imager (see figure 2) with a plurality of output taps (see figure 2, element 94 and 95);

a plurality of separate digitizing channels (see figure 3, element AD-CH1 and AD-CH2) and for each imager output tap (see column 5, lines 15-50);

an adjustment for channel gain and black level (see figure 3, elements 12-15); and

a channel balancer (see figure 3, element 18) for comparing adjacent pixels represented in each digitizing channel and for summing differences in levels over many frames, and where an accumulated difference is used as a feedback signal to drive such summing to a minimum (see column 6, lines 50 to column 7, line 60: it is inherent that since the Shiomi reference discloses the

structure of the channel balancer or unbalance amount calculation circuit, the structure may be programmed to disclose the use limitation described in the claim).

In regard to claim 2, Shiomi et al., US 6,791,615, discloses the camera of claim 1, wherein:

the adjustment is such that said black level is set by temporarily blacking out the imager, and said feedback is used to find a balance of black levels between the channels (see column 14, lines 13-17).

In regard to claim 4, Shiomi et al., US 6,791,615, discloses a method for improving the operation of a multitap imager in a camera, the method comprising the steps of:

collecting pixel information from a plurality of taps in a multitap imager connected to respective channels that include samplers, amplifiers, and digitizers (see column 5, lines 15-40);

comparing the difference between pixel values in adjacent pixels from respective said taps (see column 6, lines 31-48); and

adjusting a channel associated with one of said taps to minimize a sum of any such differences between pixel values in adjacent pixels from respective said taps (see column 6, lines 50 to column 7, line 60).

In regard to claim 5, Shiomi et al., US 6,791,615, discloses the method of claim 4, wherein:

the adjusting is such that the gain of one channel is changed relative to the gain of another channel (see column 7, lines 30-34).

In regard to claim 6, Shiomi et al., US 6,791,615, discloses the method of claim 4, wherein: the adjusting is such that the DC-level of one channel is changed relative to the gain of another channel by optically forcing said imager to output its black levels (see fig 11, steps 166 or 169).

***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. **Claims 3 and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shiomi et al., US 6,791,615, in view of Chen et al., US 6,552,744.**

In regard to claim 3, Shiomi et al., US 6,791,615, discloses a multi-tap camera, comprising:

a multitap imager (see figure 2) with a plurality of output taps (see figure 2, element 94 and 95);

a plurality of separate digitizing channels (see figure 3, element AD-CH1 and AD-CH2) and for each imager output tap (see column 5, lines 15-50).

The Shiomi reference does not disclose a pattern generator for use once during a calibration to generate a test pattern in the digitizing channels that demonstrates to a

frame-grabber how exactly to stitch the various lanes or zones of a whole image frame back together by pixel shifting columns.

Chen et al., US 6,552,744, discloses a camera with program code the can be used to combine images into a panoramic or composite image the technique of cross-correlating the images to determine a spatial relationship between the images to shift of slide the images into the correct position to stitch them together (see column 5, lines 31-59 and column 6, lines 39-44).

It would have been obvious to one of ordinary skill in the art at the time of invention to have been motivated to modify Shiomi et al., US 6,791,615, in view of Chen et al., US 6,552,744, to have a pattern generator for use once during a calibration to generate a test pattern in the digitizing channels that demonstrates to a frame-grabber how exactly to stitch the various lanes or zones of a whole image frame back together by pixel shifting columns, in order to improve the image quality of the recombined image by having it correctly aligned using the image processing program on the camera, so that the user does not have to perform the processing on a separate computer.

In regard to claim 7, Shiomi et al., US 6,791,615, discloses a method for calibrating a multitap imager in a camera for use with a frame grabber, the method comprising the steps of:

generating a test pattern by injecting its constituent frame parts into a plurality of taps in a multitap imager connected to respective channels that include samplers, amplifiers, and digitizers (see column 5, lines 15-50).

The Shiomi reference does not disclose setting a restitching by a frame grabber of the test pattern to eliminate bit shifts in lines and rows.

Chen et al., US 6,552,744, discloses a camera with program code the can be used to combine images into a panoramic or composite image the technique of cross-correlating the images to determine a spatial relationship between the images to shift of slide the images into the correct position to stitch them together (see column 5, lines 31-59 and column 6, lines 39-44).

It would have been obvious to one of ordinary skill in the art at the time of invention to have been motivated to modify Shiomi et al., US 6,791,615, in view of Chen et al., US 6,552,744, to set a restitching by a frame grabber of the test pattern to eliminate bit shifts in lines and rows, in order to improve the image quality of the recombined image by having it correctly aligned using the image processing program on the camera, so that the user does not have to perform the processing on a separate computer.

### *Conclusion*

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. US 7,050,098, discloses processing an image signal out from an image sensing unit which includes a plurality of image sensing regions constructing one frame.

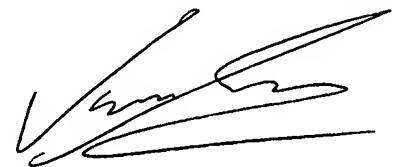
US 5,737,015, discloses a multiple channel output imaging element.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Gevell Selby whose telephone number is 571-272-7369. The examiner can normally be reached on 8:00 A.M. - 5:30 PM (every other Friday off).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vivek Srivastava can be reached on 571-272-7304. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

gvs



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